TRANSLATION

Utility Model S61−192655

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Name for the Utility Model: A motor unit equipped with an electric battery case

Utility Model: S60 (60th year of the Showa era)-78071

Date of Application: May 24, 1985

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Specification

1. Title of this Art: A motor unit equipped with an electric battery case
2. Utility Model Registration Claim: A motor unit equipped with an electric battery case made of a tube-shaped electric battery case having an open end and closed end as well as motor equipped with the first and second electrical connecting point; the said electric battery case is equipped with electrical battery terminal within the said closed end and has electrically conductive lining layer which is electrically connected to the said electrical battery terminal on the inner periphery; the said motor body is electrically connected to the electrically conductive lining layer which is on the side of the open end on the said battery case through a pair of connecting point which is electrically connected to the said first electrical connecting point as well as connected to the axis line of the said electric battery case in a gradient possible manner and by receiving the electrical battery in the said electric battery case and allowing the said motor body to stand on the same axis as the said axis line of the said electric battery case, the second electrical connecting point of the said motor body is electrically connected to the axis center of the electrode in the said electric battery case and to enable the electrical circuit to close.

3. Detailed Description of the Art

   (a) Field of Industrial Application

   This Art is relevant to the direct current motor and in particular related to a motor unit equipped with an electric battery case which allows the motor to drive by operating rollingly the direct current motor which has been leaningly connected to the head of the said tube-shaped electric battery case and enabling to close the power supply circuit with a push of a button.

   (b) Conventional Technique

   As is well known, the said power supply circuit comprising the direct current motor is connected by a electric wire to the area between the said motor and the power source through a circuit open/close means for example, switch et al. and is constructed to drive/stop the motor by operating the said circuit open/close means. A conventional motor circuit system like the one mentioned above is complicated in its construction and is not fitted for downsizing of the apparatus and simplification of the operation when applied

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to the driving source like a simple display apparatus, for example.

(c) Problems to be Solved by the Art

This Art is to provide a motor unit equipped with an electric battery case which is intended to combine the above-explained motor circuit system and the motor power supply in a space-saving manner without the use of connecting electric wire and circuit open/close element et al. in order to allow the device to be compact, to simplify the operation and to save the materials.

(d) Problem Solving Means

This Art is a motor unit equipped with an electric battery case, in order to achieve the above-mentioned purpose, composed specifically of the tube-shaped electric battery case which has opening end and closed end as well as the motor body which is equipped with the first and second electrical connection contact points on the opposing sides of the revolving axis. The former, the electric battery case, is equipped with an electric battery connecting terminal within the said closed end as well as the conductive lining layer which is electrically connected to the said electric battery connecting terminal on the inner periphery. The said motor body is electrically connected to the conductive lining layer found on the open-end side of the said electric battery case through a pair of the connecting ends which are electrically connected to the said first electrical connection contact point. In addition, the said motor body is connected to the axis line of the said electric battery case in a gradient manner, allows the electric battery to be received in the said electric battery case, allows the motor body to stand on the same axis as the axis of the said electric battery case, enables the open/close of the electrical circuit by electrically connecting the second electrical connection contact point of the said motor to the central axis of the electrode found in the said electric battery case.

(e) Explanation of the Embodiments

A detailed explanation based on the illustrated, specific embodiments on the motor unit equipped with an electric battery case of this Art is given below.

The motor unit (1) described in this Art is composed of the electric battery case (2) which is tube-shaped and having an open end (4) and a closed end (5) as well as the motor body (3) which is equipped with the first and second electrical connecting points (7), (8) respectively which are set against each other to the direction of the revolving axis (6). The tube body (9) which forms the said electric battery case (2) is composed of insulating material like

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paper or plastics and having an open end (4) on the one side and forms a closed end (5) which is covered by the electrically conductive cap body (10) on the other side. Inside the said closed end (5), there is an electric battery connecting terminal (11) which is shaped like a coil spring. The said connecting terminal (11) is fixed to the said electrically conductive cap body (10). Furthermore, on the inner periphery of the tube body (9) on the said electric battery case (2), electrically conductive lining layer (12) is set overall. The said electrically conductive lining layer (12) electrically connected to the said electric battery connecting terminal (11) through the said electrically conductive cap body (10). On the other hand, the said motor body (3) exposes the two electrical connecting points (7) and (8) respectively on the opposing sides of the extendable revolving axis (6). One of the two electrical connecting points (7) has the pair of connecting end (13) which extends outwards and is fixed firmly to it. The said connecting end (13) is composed of electrically conductive material and is pivotally connected to the open end (4) side of the said electric battery case (2) through the grommet member (14) which is likewise made of electrically conductive material. Therefore, the said motor body (3) is connected to the open end side of the said electric battery case (2) in a gradient possible manner. In addition, the electrical connecting point (7) of the said motor body (3) is electrically connected to the electric battery connecting terminal (11) through the connecting end (13), the grommet member (14), electrically conductive lining layer (12) and electrically conductive cap body (10). On the other hand, the second electrical connecting point (8) of the motor body (3) is situated on the center of the axis of the motor body (3) and is formed in a protruding and outward manner. Based on the motor unit as composed as above, the open end of the electric battery case is to be left open by keeping the motor body almost 90 degrees against the electric battery case (Ref. Figure No.2). The specified number of electric battery/ies (15) is/are to be received by the open end side of the electric battery case (2) with the designated direction (Ref. Figure No.3). After that, by letting the motor body (3) stand on the same axis line as that of the said electric battery case, the second electrical connecting point (7) of the said motor body (3) is connected to the head electrode (16) of the electric battery (15) set in the said electric battery case, closes the electrical circuit and let the motor drive (Ref. Figure No.4).

(f) Effect of the Art

As described above, the motor unit equipped with the electric battery case of the this Art has the very simply constructed motor unit through omitting the connecting electric wire, circuit open/close element et al. In this sense, it is suited for mass production. It is also economically beneficial from the viewpoint of energy saving. Furthermore, the motor unit equipped with the electric battery case of this Art has been made to operate by opening/closing the motor-drive circuit through the rolling operation of the motor body. It is also very beneficial in terms of the simplification of the operability.

4. Brief Description of the Drawings

Figure No.1 shows the sectional side view of the motor unit equipped with the electric battery case of this Art.

Figure No.2 shows the perspective view of the motor which is in a gradient position.

Figure No.3 shows the perspective view of the electric battery case with the electric battery installed.

Figure No.4 shows the perspective view of the motor power supply circuit to be closed with the motor body to be in a standing position after having the electric battery installed.

(1) .... Motor unit
(2) .... Electric battery case
(3) .... Motor body
(4) .... Open end
(5) .... Closed end
(7) .... First electrical connecting point of the motor
(8) .... Second electrical connecting point of the motor
(9) .... Insulating tube body
(12).......... Electrically conductive lining layer
(13) .... Connecting ends
(14) .... Grommet member
(15) .... Electric battery

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(54)考案の名称　電池ケースを備えたモータユニット

㉑実　願　昭60－78071

㉒出　願　昭60(1985)5月24日

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明　細　書

1.　考案の名称

電池ケースを備えたモータユニット

2.　実用新案登録請求の範囲

開口端と封塞端とを有する筒状の電池ケースと、

回転軸の背反側に第1および第2の電気接続接点を備えたモータ本体とから成り、

前記電池ケースは、前記封塞端内側に電池接触子を備え、内周面に前記電池接触子に電気的に接続される導電性ライニング層を備えて成り、

前記モータ本体は、前記第1の電気接続接点に電気的に接続される一対の連結片を介して前記電池ケースの開口端側の導電性ライニング層に電気的に接続され、かつ前記電池ケースの軸線に対して傾動可能に連結され、前記電池ケース内に電池を収容して、前記モータ本体を前記電池ケースの軸線に対して同一軸的に起立させることによつて前記モータ本体の第2の電気接

続接点が前記電池ケース内の軸心電極に電気的に接続され電気回路が閉成されるようにしたことを特徴とする電池ケースを備えたモータユニット。

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3. 考案の詳細な説明

(a) 産業上の利用分野

この考案は、直流モータに関連するものであり、特に、筒状の電池ケースを備えていて、該筒状の電池ケースのヘッド部分に直流モータを傾動可能に連結形成しておき、前記直流モータを起伏操作することによつて、ワンタッチで電源回路を閉成してモータを駆動させることができるようになした電池ケースを備えたモータユニットに関するものである。

(b) 従来の技術

周知のように、直流モータを含む電源回路は、当該モータと電源との間を、スイッチ等の回路開閉手段を介して電線接続されているものであり、前記回路開閉手段を操作することにより、モータを駆動・停止させるように構成したものである。このような、従来のモータ回路システムは、構造が複雑化する点において、たとえば簡易的なディスプレ装置等の駆動源として組み込む際、装置のコンパク

ト化、操作の簡易化に不向きなものであつた。

(c)　考案が解決しようとする問題点

そこで、この考案は、上述する構造のモータ回路システムにおいて、接続電線および回路開閉素子等を用いることなく、モータ電源とをコンパクトに組み合せ、装置のコンパクト化、操作の簡易化、ならびに素材の省資化を図るべくなした電池ケースを備えたモータユニットを提供することにある。

(d)　問題点を解決するための手段

この考案は、上述する目的を達成するにあたつて、具体的には、開口端と封塞端とを有する筒状の電池ケースと、回転軸の背反側に第1および第2の電気接続接点を備えたモータ本体とから成り、前記電池ケースは、前記封塞端内側に電池接触子を備え、内周面に前記電池接触子に電気的に接続される導電性ライニング層を備えて成り、前記モータ本体は、前記第1の電気接続接点に電気的に接続される一対の連結片を介して前記電池ケースの開

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口端側の導電性ライニング層に電気的に接続され、かつ前記電池ケースの軸線に対して傾動可能に連結され、前記電池ケース内に電池を収容して、前記モータ本体を前記電池ケースの軸線に対して同一軸的に起立させることによつて前記モータ本体の第2の電気接続接点が前記電池ケース内の軸心電極に電気的に接続され電気回路が閉成されるようにした電池ケースを備えたモータユニットである。

(e) 実施例の説明

以下、この考案にかかる電池ケースを備えたモータユニットについて、図面に示す具体的な実施例にもとづいて詳細に説明する。

この考案に成るモータユニット(1)は、開口端(4)と封塞端(5)とを有する円筒状の電池ケース(2)と、回転軸(6)の軸方向背反側に第1および第2の電気接続接点(7), (8)を備えたモータ本体(3)とから成つている。前記電池ケース(2)を形成する筒体(9)は、紙、あるいは合成樹脂等の絶縁材から成り、一端側において開口端

(4)を形成し、他端側において導電性のキャップ体(10)により封塞された封塞端(5)を形成する。前記封塞端(5)の内側には、コイルスプリング状の電池接触子(11)が設けてあり、前記接触子(11)は、前記導電性のキャップ体(10)に固定されている。さらに、前記電池ケース(2)における筒体(9)の内周面には、全面的に導電性ライニング層(12)が設けてある。前記導電性ライニング層(12)は、前記導電性キャップ体(10)を介して前記電池接触子(11)に電気的に接続されている。一方、前記モータ本体(3)は、回転軸(6)が延びる方向に対して軸方向背反側に2つの電気接続接点(7)，(8)が露出形成されている。一方の電気接続接点(7)には、外方向に向けて延びる一対の連結片(13)，(13)が固着形成されている。前記連結片(13)，(13)は、導電材より成り、同じく導電材で成るハトメ部材(14)，(14)を介して前記電池ケース(2)の開口端(4)側に枢支連結されている。したがつて、前記モータ本体(3)は、前記電池ケース(2)の開口端側に傾動可能に連

結され、かつ前記モータ本体(3)の電気接続接点(7)が連結片(13)，(13)、ハトメ部材(14)，(14)、導電性ライニング層(12)、導電性キャップ体(10)を介して電池接触子(11)に電気的に接続される。一方、モータ本体(3)の第2の電気接続接点(8)は、モータ本体(3)の軸心に位置して、外方に向けて突出形成されている。以上の構成に成るモータユニットによれば、電池的ケースに対してモータ本体をほぼ90°程度傾けた状態で、電池ケースの開口端を開放しておき（第2図参照）、電池ケースの開口端側から電池ケース(2)内に所定数の乾電池(15)を所定方向に向けて収容し（第3図参照）、しかる後、前記モータ本体(3)を前記電池ケースの軸線に対して同一軸的になるように起立させることによつて、前記モータ本体(3)の第2の電気接続接点が前記電池ケース内の乾電池(15)のヘッド電極(16)に接触して電気回路が閉成され、モータが駆動するようになつている（第4図参照）。

(f)　考案の効果

以上のように、この考案に成る電池ケースを備えたモータユニットは、接続電線、ならびに回路開閉素子等を省略することにより、きわめて簡単な構造のモータユニットを構成するものであり、その点において、多量生産に適合するとともに、省資化の点と併せて、経済的にきわめて有利なものであるといえる。さらにまた、この考案の電池ケースを備えたモータユニットは、モータ本体の起伏操作によつて、モータ駆動回路を開閉操作するようにしたものであり、操作性の簡易化においても、きわめて有利なものであるといえる。

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4. 図面の簡単な説明

第1図は、この考案に成る電池ケースを備えたモータユニットの側断面図、

第2図は、モータ本体を傾動させた状態の斜視図、

第3図は、電池ケース内に乾電池を収納した状態の斜視図、

第4図は、乾電池収納後、モータ本体を起立させ、モータ電源回路を閉成した状態の斜視図である。

(1) ……………モータユニット
(2) ……………電池ケース
(3) ……………モータ本体
(4) ……………開口端
(5) ……………封塞端
(7) ……………モータの第1電気接続接点
(8) ……………モータの第2電気接続接点
(9) ……………絶縁性筒体
(12) ……………導電性ライニング層
(13) ……………連結片

⒁ ……………… ハトメ部材

⒂ ……………… 乾電池

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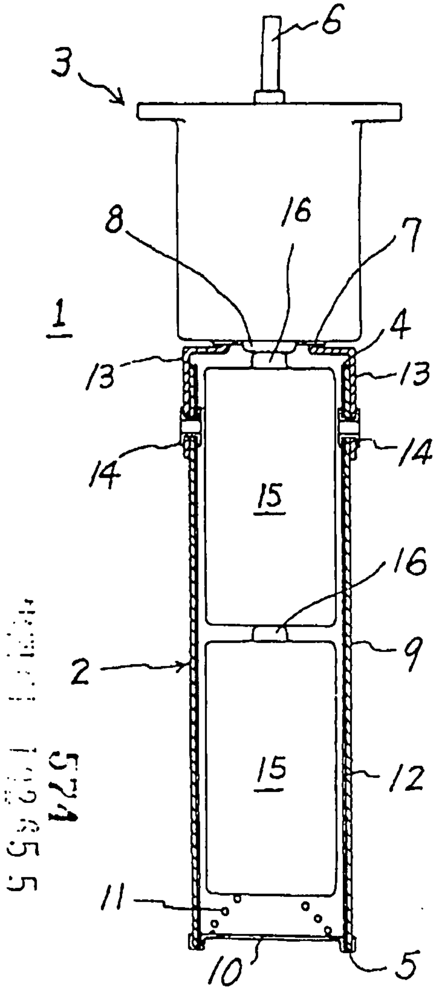
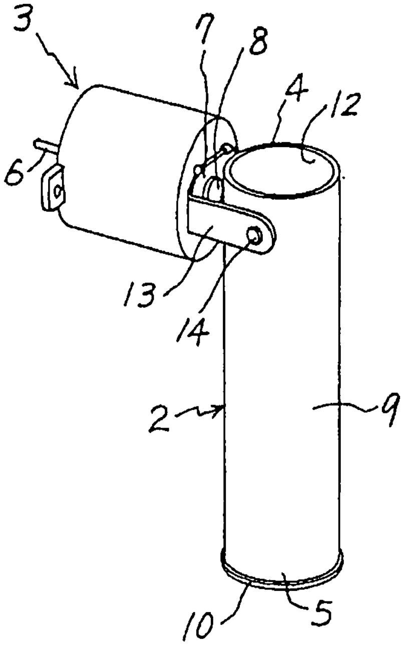
外１名

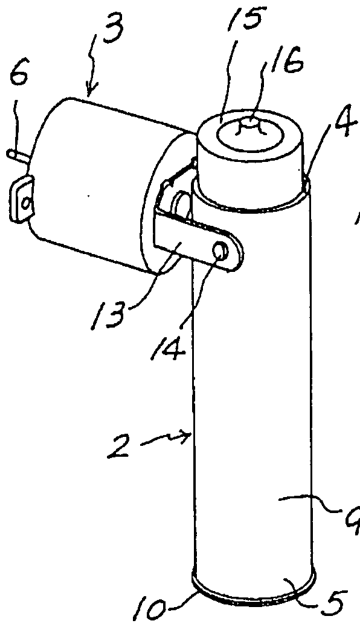
第 1 図



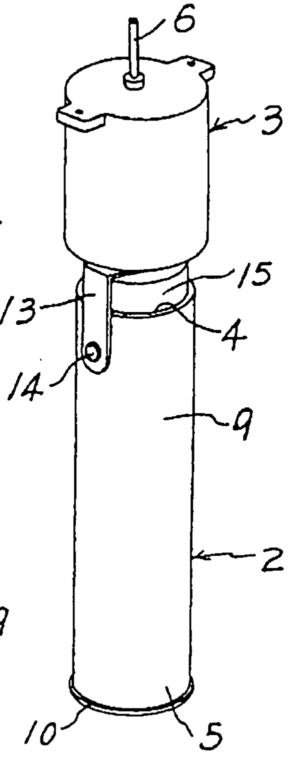
第 2 図



第 3 図



第 4 図



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